MANUAL OF THE VASCULAR PLANTS OF TEXAS[1]

This manual of the Texas flora is a monumental work and the authors, D. S. Correll and M. C. Johnston, as well as their collaborators, deserve the compliments of systematists on its publication. A definitive treatment of a large and complex flora (174 families, 1216 genera, 4839 species and 576 subspecies and varieties in Texas) must depend to a considerable extent upon the labors of predecessors. There has been a long and active series of collectors and publishers interested in Texas plants, and they have provided an excellent basis for a comprehensive flora. However, the special research on the Texas flora by the authors, and their extensive field experience with it, have brought to this publication an important element of personal knowledge. Fifty-six collaborators have provided the treatments of 20 families and of 38 separate genera. Both the authors and the collaborators are to be congratulated upon this productive cooperation.

The book is well made up and the format and typography make it easy to use. An introduction provides a brief account of the principal vegetation regions in Texas. This is followed by a key to the families and the taxonomic treatment of the flora, which encompasses 1700 pages. A brief appendix adds critical comments and some additional species from data obtained during the course of publication. The list of "Abbreviations of Authors' Names" deserves special mention. It is in fact far more than the title states. It includes birth and death dates, and a variety of other information such as the principal professional position, or other occupation, major publications, groups or floras studied, and sometimes mention of other significant contributions to botany. The inclusion of this information will

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[1]Correll, D. S. and M. C. Johnston. Manual of the vascular plants of Texas. xv + 1881 pp. frontispiece (the Texas Bluebonnet, *Lupinus subcarnosus*, in color), 3 maps, cloth. $30.00. (Contributions from the Texas Research Foundation, Edited by C. L. Lundell, vol. 6). Texas Research Foundation, Renner, Texas. 1970.

remove (for many users of the Manual) the anonymity of the authors of plant names and it will relate the authors to their botanical work. It also provides an introduction to the historical basis of the Manual.

A notable feature is the flexibility allowed in the taxonomic treatments. This is a commendable policy and much more is gained by it than from the consistency resulting from a rigidly imposed format. Extended discussion is not possible in a large manual, but the authors effectively have utilized departures from the normal format and brief comments in difficult species-groups to point out uncertainties and problems that need further study. This flexibility also has allowed the collaborators to express preferences, for example, subspecies are used by Raven and varieties by Shinners; hybrid formulas are used in *Quercus* by Muller; and Capparidaceae for the Caper Family by Iltis.

The flora of Texas is dominated by four major floristic elements. The most important in terms of area and economy is that of the Prairies and Plains, predominantly a flora of Gramineae, Leguminosae and Compositae. Two important floras extend into Texas from the east, the Appalachian-Ozark and the Coastal Plain. Together these provide the forests and woodlands of the eastern portion of the state that extend westward to the Cross-Timbers region. The Coastal Plain element also furnishes most of the species along the Gulf Coast. The Mexican flora is the most important in number of species and is of special interest because of its many endemics. This element dominates the mountains and arid valleys and basins of the Trans-Pecos region and is strongly represented elsewhere along the Rio Grande and on the Edwards Plateau. Almost half of the Pteridophyta, for example, belong to this element, largely due to the many species of *Pellaea*, *Cheilanthes* and *Notholaena*. Among other groups that show a similar geographic relation may be mentioned *Ephedra* and *Muhlenbergia*, and especially *Acacia*, *Mimosa*, *Heliotropium* and *Baccharis*.

A review in Rhodora of a flora of another part of the United States invites some comparison with the flora

treated in Gray's Manual. In the 8th Edition by M. L. Fernald, the area covered is about four times as large as Texas (it requires several northeastern states to do this); there are similar numbers of genera (1133 to 1216 in Texas) and species (5525 to 4839 in Texas). The relatively small differences in numbers could easily be due to different taxonomic viewpoints, so the two floras might well be considered nearly equivalent. There are, however, some significant differences. There are few large genera in Texas. *Panicum* with 68 species is the largest and only two others, *Carex* and *Euphorbia* have more than 50 species. *Cyperus* has 46 and there are eight other genera with more than 30 species. In the northeastern United States the largest genus is *Carex* with 267 species, and others such as *Panicum*, *Juncus*, *Salix*, *Rubus*, *Crataegus*, *Viola*, *Solidago* and *Aster* have over 50 species each. Genera with 30-50 species are *Potamogeton*, *Cyperus*, *Eleocharis*, *Scirpus*, *Polygonum*, *Ranunculus*, *etc.* Most of the larger genera have their primary strength in aquatic or marsh habitats. These genera are naturally not as well represented in Texas. For some reason their place is not taken by equally large genera of xeric habitats, although these are not lacking in Mexico.

The Manual of the Vascular Plants of Texas is a noteworthy achievement. It is a necessary guide to the Texas flora, but will be used as often beyond its geographic limits. It will certainly stimulate interest in Texas plants and further research on the rich Texas flora.

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